Important Hernia Concepts for the OB/GYN Patient
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DISCLOSURES
• None

AGENDA
• Abdominal wall hernias in pregnant patients
• Chronic pelvic pain and groin hernia
• Rectus diastasis in the post-partum patient
• Femoral hernia management
QUESTION 1
A 25 y/o G1P1 patient has a mildly symptomatic umbilical hernia and desires more children. Regarding the hernia, which of the following is the most appropriate:
A. Wait for repair; recurrence risk is markedly higher with subsequent pregnancy after hernia repair
B. Repair the hernia to prevent significant risk of future hernia complications
C. Repair the hernia but without mesh due to the risk of uterine adhesions in future pregnancy
D. Wait and repair at the same time as c-section with the next child

DISCLOSURE: HERNIA DATA ARE HARD TO COME BY
- Many variables
  - Surgeon/Technique
  - Materials/Mesh
  - Patient factors
    - BMI, DM, Smoking, Prior Repairs, Immunosuppression, Activity
- Challenging endpoints
  - Recurrence (how long to wait?)
  - Mesh infection
  - Pain
WHAT ARE THE RISKS OF HERNIA REPAIR WITH SUBSEQUENT PREGNANCY?

- Recurrence
- Pain
- Mesh complications (infection, adhesion)
- Obstruction

WHAT ARE THE RISKS OF HERNIA REPAIR WITH SUBSEQUENT PREGNANCY?

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SMFM Papers

AJOG 2016

- 11,020 US women who underwent hernia repair
- 840 had subsequent pregnancy
- Recurrence defined as re-operation for same hernia
- Overall recurrence rate of 8.3%
- 13.1% recurrence rate in those with subsequent pregnancy
- After risk adjustment of confounding factors (BMI, smoking, wound complications), 1.73 risk of recurrence with subsequent pregnancy

Risk likely under-reported in this retrospective study

Conclusion: "risk of recurrence and subsequent reoperation must be balanced against the risk of incarceration and emergent surgery during pregnancy"

Lappen et al., AJOG 2016

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**RISK OF INCARCERATION AND EMERGENT SURGERY DURING PREGNANCY**

- "Ventral hernias in pregnancy are rare, with most occurring in the second trimester, and account for less than 5% of bowel obstruction cases during pregnancy"

Oma et al. Hernia 2017
Jensen et al. Hernia 2019

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**Review**

Ventral hernia recurrence in women of childbearing age: a systematic review and meta-analysis

T. Nova, P.S. A.O., K. J. Kinsman, E. J. Zare

- 5 studies; 14,638 hernia repair females (1444 pregnant)
- 12% recurrence (subsequent pregnancy) versus 9% recurrence (no subsequent pregnancy)

- "Female patients of childbearing age with asymptomatic or minimally symptomatic ventral hernias that do not pose a significant strain on the patients’ quality of life could be provided with the option of watchful waiting…"

Hernia 2018

- One study cited "no adverse impact on the course of pregnancy or delivery" from watchful waiting (n = 12)
MESH COMPLICATIONS?
- Is suture repair better?
- Does it matter where the mesh goes?

OPEN REPAIR MESH POSITIONS
- Onlay
- Inlay (Bridge)
- Underlay (Sublay) Pre-peritoneal
  Intraperitoneal (aka IPOM)

Dutch study (contained system)
- n = 8, included incisional hernias from port site, c-section
- Retrospective evaluations
- 5 patients had "tearing" or "pulling" pain during pregnancy, with one patient being admitted twice for oral analgesics. All pain "disappeared" after delivery.
- No other pregnancy-related or delivery-related complications
- One recurrence which was asymptomatic
Important Hernia Concepts for the OB/GYN Patient

- Pregnancy causes 1.6-fold increased risk of recurrence
- Pregnancy causes 73% increased risk of reoperation for recurrence
- Emergent UH repair during pregnancy carries minimal 30-day morbidity to the mother
- Several studies show no difference in recurrence with suture only versus mesh repair
  - In general, suture only repair carries a substantially higher risk of recurrence (up to 64%)

- Few (29%) primary ventral hernias that occur during pregnancy require repair afterwards due to lack of symptoms
- Concomitant VH repair with C-section is safe
  - No increased risk of post-operative complications, with or without mesh (level 4 evidence based on retrospective analysis of case-control series)

VENTRAL HERNIAS IN FEMALES

- NSQIP 2005-2015
- Females had greater LOS, OR time, wound infection, organ space SSI, UTI, and bleeding requiring transfusion (statistically significant)
- Females have greater morbidity compared to males with same BMI

Data presented at AHS Hernia Congress 2018
HERNIAS IN PREGNANCY

- Watchful waiting is reasonable for minimally symptomatic hernias in pregnant patients or patients of child-bearing age
- Complications from hernia during pregnancy are rare
- Complications are more common in women than men overall for ventral hernia repair

QUESTION 2

A 42 y/o G2P2 female with chronic pelvic pain had a pelvic US suggesting a left sided indirect, fat-containing inguinal hernia with an 8 mm neck. Symptoms include diffuse, non-cyclical pelvic pain, constipation, intermittent dysuria, and dyspareunia. The hernia is not palpable on exam.

Which of the following would be most appropriate in management?

A. Open inguinal hernia repair with mesh
B. Open inguinal hernia repair with suture only
C. Laparoscopic inguinal hernia repair without mesh
D. Dynamic CT imaging
QUESTION 2

42 G.P., chronic pain with pelvic US suggesting 8mm left indirect fat-containing hernia. Which of the following would be most appropriate in management?
A. Open inguinal hernia repair with mesh
B. Open inguinal hernia repair with suture only
C. Laparoscopic inguinal hernia repair without mesh
D. Dynamic CT imaging

ONCE AGAIN, DATA ARE LIMITED

- Things I learned while preparing for this talk:
  - Chronic pelvic pain is common
  - Accounts for 10% of all GYN consults
  - International Pelvic Pain Society
  - Often multi-factorial

- Conundrum for the general surgeon:
  - Adhesions?
  - Non-palpable, US+ inguinal hernia

THE NON-PALPABLE, RADIOGRAPHICALLY PRESENT INGUINAL HERNIA

- “Never operate on a non-palpable inguinal hernia for pain- it only results in more pain (for the patient and the surgeon)”
- Mesh is designed to scar into place and is not easily removed
- Once a mesh is in place, further workup for persistent pain is much more difficult
- Laparoscopic evaluation could be done concomitantly during repair
Hernia is part of a broad differential diagnosis list
Found in 1.6 to 6% of women with chronic pelvic pain
CT considered of little value in initial workup
US considered useful, especially for hernia and abdominal wall endometriosis

Anecdotally (with shared opinion of senior colleagues and mentors), US is not to be 100% trusted in IH diagnosis
Inguinal hernias are often over-called
Limitations: habitus, user, interpretation for surgeon
US VERSUS CT

**US**
- No radiation
- No IV
- Dynamic: with Valsalva, coughing, upright, etc
- User-dependent
- Habitus-limiting
- Accuracy?
- Surgeon interpretation limited

**CT**
- IV, radiation
- Static, supine
- Can be done with Valsalva
- May observe other etiologies of pain
- Surgeons can interpret

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**US VERSUS CT**

- US
- No radiation
- No IV
- Dynamic: with Valsalva, coughing, upright, etc
- User-dependent
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- CT
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**Surgical Evaluation and Treatment of the Patient with Chronic Pelvic Pain**

- Discusses laparoscopic inguinal exploration and empiric mesh placement, with 35% showing improvement (retrospective) and an additional 42% showing improvement with later recurrence of pain.

- Also discusses conscious laparoscopic pain mapping, involving diagnostic laparoscopy under mild sedation.

- None of the above are recommended; further studies needed

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Laparoscopic inguinal hernia repair requires mesh.
Dynamic CT and/or MRI can supplement hernia detection if clinical picture unclear.

CHRONIC PELvic PAIN AND GROIN HERNIA
Hernia is a rare cause of chronic pelvic pain but can be diagnosed preferably by exam, but also with imaging (US, dynamic CT if not palpable).

QUESTION 3
A 34 y/o G3P3 patient is 10 weeks post-partum and complains of a large upper abdominal wall bulge. There is no pain but it is unsightly, particularly when exerting herself. Which of the following is the most likely diagnosis?
A. Primary epigastric hernia
B. Omphalocele
C. Soft tissue tumor
D. Rectus diastasis
QUESTION 3

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D. Rectus diastasis

The general surgeon’s perspective of rectus diastasis. A systematic review of treatment options

- Definition: inter-rectus distance (IRD) of 22 mm, measured 3 cm above the umbilicus
- Multiple repair techniques, with no data to compare efficacy: open, endoscopic, laparoscopic, robotic, plication or modified ventral hernia repair with mesh
- Regresses spontaneously in most women after childbirth
  - Persists in up to 33% at one year
- No physiotherapy program was effective at diminishing the IRD in the relaxed state

Surg Endosc 2017
Important Hernia Concepts for the OB/GYN Patient

RECTUS DIASTASIS: THIS GENERAL SURGEON’S PERSPECTIVE

- Cosmetic; not typically covered by insurance, mostly repaired by plastics
- PT at UCH has an effective program for post-partum patients
- ~ Dozen referrals per year from PCPs, NPs, and PAs for asymptomatic, “massive” ventral hernias in the upper abdomen without prior surgery
- In the setting of prior incision, CT scan reports often describe a “diastasis” that is actually a hernia on exam

RECTUS DIASTASIS: THIS GENERAL SURGEON’S PERSPECTIVE

- Pain is rare; concomitant epigastric hernias can be sought with imaging (US or dynamic CT) if not apparent on exam
- Robotic repair is feasible (with mesh reinforcement)
- Excellent opportunity to diagnosis with physical exam alone
- Rectus Diastasis is a risk factor for recurrence in suture repair of hernia (mesh repair and/or diastasis repair should be pursued)

PHYSICAL EXAM: RECTUS DIASTASIS

- Upright and supine, the abdominal wall is flat since the rectus abdominus muscles are relaxed
- When actively leaning back, the patient invariably grabs my wrist and points as the bulge occurs (and disappears as soon as they are supine)
- Nearly always between the umbilicus and xiphoid
QUESTION 4
A 24 y/o G4P4 patient has a minimally symptomatic right groin bulge and seeks management options. Which of the following is most appropriate?
A. Watchful waiting, with education of possible risks of incarceration/strangulation
B. Open repair without mesh
C. Open repair with mesh
D. Laparoscopic repair

Groin hernias are 8-10 times more common in men
Femoral hernias are 4 times more common in women
Femoral hernia incarceration is more common than inguinal hernia incarceration
17% of females with groin hernias require emergent repair
5% of men with groin hernias require emergent repair
23% of emergent femoral hernia repairs require bowel resection; 5% of emergent inguinal hernias require bowel resection
Open groin hernia repair in women has a higher re-operative rate
In 40% of re-operations, femoral hernias are found

International hernia guidelines suggest all female groin hernias undergo laparoscopic repair when available due to lower risks of chronic pain and ability to detect/repair femoral hernias

CASE EXAMPLE: MIS REPAIR OF BILATERAL INGUINAL HERNIAS IN A FEMALE
Healthy, 45 yo G3P4 patient with mildly symptomatic, bilateral inguinal hernias.
US: spontaneously reducible, fat-containing, direct and indirect bilateral inguinal hernias
HERNIAS IN OBGYN PATIENTS

- Watchful waiting is okay in pregnant patients.
- Hernias may be a component of chronic groin pain; diagnosis and patient education are key.
- Rectus diastasis does not carry the complication risks of ventral hernias but can be repaired in similar manners.
- Watchful waiting is not okay in non-pregnant patients with groin hernias.
- Hernia diagnosis is not always straightforward!

THANK YOU

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